



without concentrate supplementation. Guinea grass, *Panicum maximum* (7.68% CP) and Ruzi grass, *Brachiaria ruziziensis* after seed harvest (2.15% CP) were used as the source of roughages in the first 53 days and the latter 59 days of the entire 112 days (16 weeks) experimental period, respectively. The roughages were offered *ad libitum* to animals in all treatments.

The results showed that the average daily gain among lambs in T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub> and T<sub>5</sub> did not show significant difference from the mean values of 98.70, 91.06, 85.71, 82.59 and 81.92 g/h/d respectively. However, lambs that were fed only roughage (T<sub>6</sub>) lost 5.26 g/h/d. The highest feed intake was obtained from lambs in T<sub>2</sub> and T<sub>1</sub>, followed by lambs in T<sub>4</sub>, T<sub>3</sub> and T<sub>5</sub>, and lowest for lambs in T<sub>6</sub>. Total feed dry matter intake for lambs in T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub>, T<sub>5</sub> and T<sub>6</sub> were 799.75, 827.30, 714.30, 752.74, 706.93 and 486.85 g/h/d or accounting for the values of 3.61, 3.94, 3.42, 3.53, 3.50 and 3.25% of BW, respectively. There was also no difference in feed conversion (feed/gain) among the lambs in T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub> and T<sub>5</sub> with the respective corresponding values of 8.23, 9.06, 8.36, 9.12 and 8.75. The digestibilities of nutrients as measured by total collection and internal indicator (using acid insoluble ash, AIA) methods were highly correlated ( $r = 0.88$ ). Except for the digestibility of protein which was lower in T<sub>5</sub>, the digestibilities of various nutrients including dry matter (DM), organic matter (OM), neutral detergent fiber (NDF) and acid detergent fiber (ADF) in T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub> and T<sub>5</sub>, were relatively similar. No difference in carcass characteristics was also observed among the lambs in T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub> and T<sub>5</sub>. In the

case of production cost, especially the feed cost, it was found that it tended to decrease with the increase levels of urea in the concentrates. The average feed cost for 1 kg. of gain were 28.22, 26.53, 24.77, 24.74 and 22.44 baht for the lambs in T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub> and T<sub>5</sub>, respectively.

Based on the results of this experiment, it may be concluded that up to 3.75% of urea can be used to replace soybean meal protein in the supplemented concentrate if the level of supplementation do not exceed 1.50% of BW. This was due to the evidence that the lambs that were supplemented with concentrates containing all levels of urea under this study showed no sign of urea toxicity and their economic traits were almost similar to those supplemented with concentrate containing natural protein from soybean meal.